

Amendments to the Claims:

1. (Original) A control system for controlling a variable-geometry mechanism in a turbocharger for an engine, comprising:

a logic arrangement structured and arranged to sample a desired control value representing a desired operating condition in which the turbocharger is to be operated, and to sample a previous desired control value representing the desired control value determined in a previous sample period, the logic arrangement being further structured and arranged to determine a first difference parameter as the difference between the desired control value and the previous desired control value and to produce a control signal output based on said first difference parameter, such that the control signal output has a first value when said first difference parameter is greater than a predetermined first threshold and has a second value different from the first value when said first difference parameter is not greater than the predetermined first threshold, and wherein the logic arrangement is structured and arranged to provide the first value as a pulse of predetermined amplitude and duration.

2. (Original) The control system of claim 1, wherein the logic arrangement is structured and arranged to determine the amplitude and duration of the pulse as a function of said first difference parameter.

3. (Original) The control system of claim 1, wherein the logic arrangement is structured and arranged to determine the amplitude and duration of the pulse as a function of ambient conditions.

4. (Original) The control system of claim 2, wherein the logic arrangement is structured and arranged to cause the control signal output to have the second value upon expiration of the duration of the pulse.

5. (Original) The control system of claim 1, wherein the logic arrangement includes a switch structured and arranged to switch between first and second conditions, the switch in the

first condition outputting the control signal output having the first value, the switch in the second condition outputting the control signal output having the second value, the logic arrangement being structured and arranged to provide a switching signal to the switch for switching between the first and second conditions.

6. (Original) The control system of claim 5, wherein the second value for the control signal output comprises a normal control signal, and further comprising a controller structured and arranged to produce the normal control signal for driving the turbocharger from a current operating condition toward the desired operating condition.

7. (Original) The control system of claim 6, wherein the controller comprises an open-loop controller.

8. (Original) The control system of claim 7, wherein the open-loop controller is structured and arranged to produce the normal control signal as a function of engine speed and degree of loading on the engine.

9. (Original) The control system of claim 7, wherein the open-loop controller is structured and arranged to produce the normal control signal as a function of engine speed and fueling rate of the engine.

10. (Original) The control system of claim 6, wherein the controller comprises a closed-loop controller receiving a feedback signal and determining the normal control signal based on the feedback signal.

11. (Original) The control system of claim 10, wherein the logic arrangement is structured and arranged to sample an actual control value representing an actual operating condition of the turbocharger and to determine a second difference parameter as the difference between the desired control value and the actual control value, the logic arrangement producing the control signal output at the first value when either the first difference parameter is greater than the first threshold or the second difference parameter is greater than the second threshold.

12. (Original) The control system of claim 11, further comprising a sensor operable to detect the actual operating condition and to produce the actual control value and supply the actual control value to the logic arrangement.

13. (Currently Amended) The control system of claim 1, further comprising a memory structured and arranged to store the previous desired control value and to supply the previous desired control value to the logic arrangement.

~~13.~~ 14. (Currently Amended) The control system of claim ~~12~~ 13, wherein the memory is structured and arranged to filter the stored previous desired control value.

~~14.~~ 15. (Currently Amended) The control system of claim 1, further comprising an actuator operable to adjust the variable-geometry mechanism, the actuator being arranged to receive the control signal output from the logic arrangement.

~~15.~~ 16. (Currently Amended) A control system for a variable-geometry turbocharger, comprising:

a logic circuit having a first input, a second input, and an output, the logic circuit being structured and arranged to calculate a difference between the first and second inputs and to selectively provide either a first value or a second value to the output depending on the value of said difference, the logic circuit being further structured and arranged to produce a pulse control signal;

means for providing a desired control signal to the first input;

means for providing a previous control signal to the second input;

a controller structured and arranged to provide a normal control signal;

a switch receiving the normal control signal and the pulse control signal and having a switch output, the switch being responsive to the logic circuit output and providing the pulse control signal to the switch output responsive to the first value on the logic circuit output and providing the normal control signal to the switch output responsive to the second value on the logic circuit output; and

an actuator connected to the switch output, the actuator operable to adjust a variable-geometry mechanism of the turbocharger.

~~16.~~ 17. (Currently Amended) A method for controlling a variable-geometry mechanism in a turbocharger for an engine, comprising the steps of:

sampling a desired control value representing a desired operating condition in which the turbocharger is to be operated;

sampling a previous desired control value representing the desired control value determined in a previous sample period;

determining a first difference parameter as the difference between the desired control value and the previous desired control value; and

supplying a control signal output to an actuator for the variable-geometry mechanism based on said first difference parameter, such that the control signal output has a first value when said first difference parameter is greater than a predetermined first threshold and has a second value different from the first value when said first difference parameter is not greater than the predetermined first threshold, said first value being supplied in the form of a pulse of predetermined amplitude and duration.

~~17.~~ 18. (Currently Amended) The method of claim ~~16~~ 17, wherein the amplitude and duration of the pulse are functions of ambient conditions.

~~18.~~ 19. (Currently Amended) The method of claim ~~16~~ 17, wherein the amplitude and duration of the pulse are determined as a function of said first difference parameter.

~~19.~~ 20. (Currently Amended) The method of claim ~~16~~ 17, further comprising the step of causing the control signal output to have the second value upon expiration of the duration of the pulse.

~~20.~~ 21. (Currently Amended) The method of claim ~~16~~ 17, wherein the second value is determined as a function of engine speed and degree of loading on the engine.

~~21.~~ 22. (Currently Amended) The method of claim ~~16~~ 17, wherein the second value is determined as a function of engine speed and fueling rate of the engine.

~~22.~~ 23. (Currently Amended) The method of claim ~~16~~ 17, wherein the second value is determined based on a feedback signal.

~~23.~~ 24. (Currently Amended) The method of claim ~~16~~ 17, further comprising the steps of:

sampling an actual control value representing an actual operating condition of the turbocharger;

determining a second difference parameter as the difference between the desired control value and the actual control value; and

producing the control signal output at the first value when either the first difference parameter is greater than the first threshold or the second difference parameter is greater than the second threshold.

~~24.~~ 25. (Currently Amended) The method of claim ~~16~~ 17, further comprising the step of storing the previous desired control value in a memory.

~~25.~~ 26. (Currently Amended) The method of claim ~~24~~ 25, further comprising the step of filtering the stored previous desired control value.